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Virtual Worlds Technology

Improving Access to Psychoeducation and Psychological Health Care for Post-Deployment Service Members

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T2 Webinar, June 10, 2010

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Agenda

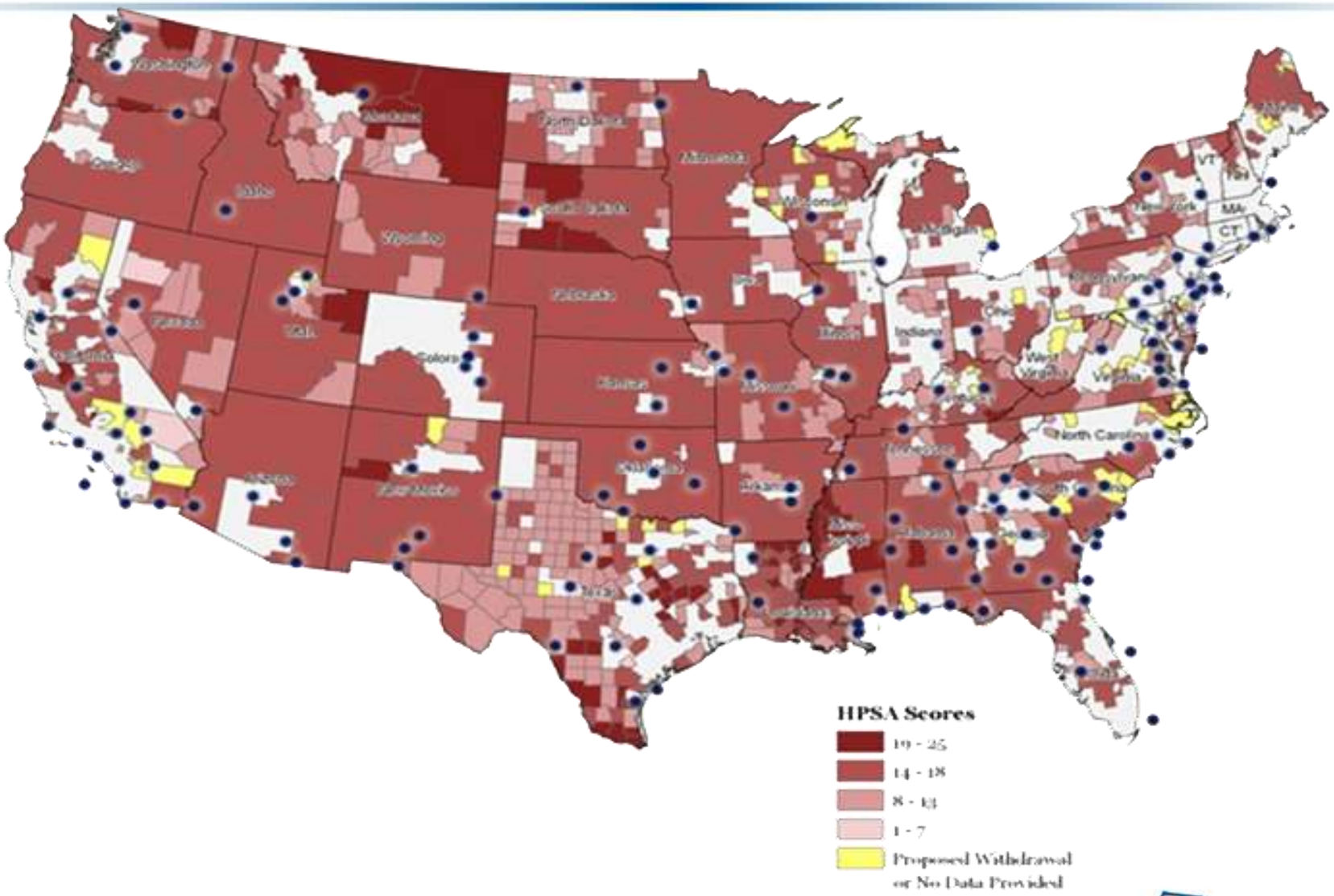
1. Barriers to Care, Including Limited Resources, Perceived Stigma, and Physical Access Issues
2. Technology Solutions to Address Barriers
3. Virtual Worlds (VW) Affordances
4. Potential Uses of VW Technology
5. Current T2 Efforts in VW Development
6. Potential Barriers Specific to Certain Telehealth Applications

Limited Resources

- Approximately 40% vacancy of AD licensed clinical psychologist in Army and Navy
  - Shortages aggravated by high attrition rates, deployments, “compassion fatigue”
- Dissemination of empirically validated treatments across DoD/VA providers
  - 10%-20% military BH providers trained to deliver any of the four treatments deemed VA/DoD “best practices” for PTSD
- Wait times for next available appointments

Johnson, S.J, Sherman, M.D., Hoffman, J.S., James, L.C., Johnson, P.L., Lockman, J.E., Magee, T.N., and Riggs, D. “The Psychological Needs of U.S. Military Service Members and Their Families: A Prelimiary Report”, American Psychological Association Presidential Task Force on Military Deployment Services for Youth, Families and Service Members, February 2007.

Location of MHS Facilities and Mental Health Professional Shortage



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Limited Resources

- Possible solutions
  - Increase Incentives for Psychologist Commissions
  - Hire more Civilian Providers
  - “Force Multipliers”
    - E.g. Emphasis on Group Treatments
  - Automate Services Not Requiring Actual Interface with Trained Providers
  - Improved Provider Training

Perceived Stigma

- Negative and erroneous reactions of the general public to persons with mental illness is common (Crisp et al., 2000)
- When individuals are aware of public stigma, barriers to care may occur (Green-Shortridge et al., 2007)
- Particularly challenging in military cultures where a key shared value is strength (Reger et al., 2007)

Perceived Stigma

- Those who screened positive for a mental health disorder were twice as likely to report fears of treatment stigma and barriers to care (Hoge et al., 2004)
- Only 38% to 45% of those screening positive for a mental health disorder were interested in care (Hoge et al., 2004)
- Service Members may be hesitant to access treatment that will identify psychological problems

Table 4.35 SELECTED MENTAL HEALTH TREATMENT ISSUES, PAST 12 MONTHS, 2002–2008

Mental Health Measure	DoD Services[a,c] 2002	DoD Services[a,c] 2005	DoD Services[a,c] 2008	All Services[b] 2008
Perceived Need for Mental Health Counseling	18.7 (0.6)	17.8 (0.6)[3]	19.8 (0.6)[2]	19.8 (0.6)[2]
Receipt of Mental Health Counseling				
Any counseling professional[d]	12.5 (0.5)[234]	13.9 (0.5)[134]	17.0 (0.7)[12]	16.9 (0.7)[12]
From a military mental health professional	6.1 (0.4)[234]	7.8 (0.4)[134]	10.2 (0.6)[12]	10.1 (0.6)[12]
From a general physician at a military facility	4.4 (0.3)[34]	4.3 (0.2)[34]	7.3 (0.5)[12]	7.3 (0.5)[12]
From a military chaplain	5.4 (0.3)	5.5 (0.3)	6.1 (0.3)	6.0 (0.3)
From a civilian mental health professional	2.1 (0.2)[234]	3.0 (0.2)[134]	4.7 (0.4)[12]	4.7 (0.4)[12]
From a general physician at a civilian facility	1.1 (0.1)[34]	1.6 (0.1)[34]	2.7 (0.2)[12]	2.7 (0.2)[12]
From a civilian pastoral counselor	2.2 (0.1)[34]	2.3 (0.2)	2.8 (0.2)[1]	2.8 (0.2)[1]
From a self-help group (AA, NA)	NA NA	2.1 (0.2)	2.4 (0.1)	2.4 (0.1)
Concerns Sought Help For				
Depression	NA NA	7.4 (0.3)	7.8 (0.5)	7.8 (0.5)
Anxiety	NA NA	4.6 (0.3)[34]	5.9 (0.4)[2]	5.9 (0.4)[2]
Family problems	NA NA	7.3 (0.4)	7.5 (0.4)	7.4 (0.4)
Substance use problems	NA NA	1.8 (0.2)	1.6 (0.1)	1.6 (0.1)
Anger or stress management	NA NA	5.9 (0.3)[34]	7.4 (0.5)[2]	7.3 (0.4)[2]
Other	NA NA	4.8 (0.3)	4.9 (0.4)	4.8 (0.3)
Perceived Damage to Career				
Definitely would	18.3 (0.6)[234]	16.1 (0.5)[134]	13.0 (0.4)[12]	12.9 (0.4)[12]
Probably would	30.5 (0.5)[234]	28.0 (0.6)[134]	23.1 (0.5)[12]	23.1 (0.5)[12]
Probably would not	35.6 (0.8)	34.1 (0.7)	34.4 (0.6)	34.6 (0.6)
Definitely would not	15.6 (0.4)[234]	21.7 (0.7)[134]	29.5 (0.5)[12]	29.5 (0.5)[12]

Note: Table displays the percentage of military personnel by Service who reported the mental health issues indicated in the rows of this table. The standard error of each estimate is presented in parentheses. Estimates have not been adjusted for sociodemographic differences among Services.

[a]DoD Services includes Army, Navy, Marine Corps, and Air Force.

[b]All Services includes Army, Navy, Marine Corps, Air Force, and Coast Guard.

[c]Significance tests were conducted between 2002, 2005, 2008 DoD Services and 2008 All Services. A superscripted number = beside an estimate indicates the estimate is significantly different from the estimate that appears in column #. In other words:

[1]Indicates estimate is significantly different from the estimate in column #1 (2002) at the 95% confidence level.

[2]Indicates estimate is significantly different from the estimate in column #2 (2005) at the 95% confidence level.

[3]Indicates estimate is significantly different from the estimate in column #3 (2008, DoD Services) at the 95% confidence level.

[4]Indicates estimate is significantly different from the estimate in column #3 (2008, All Services) at the 95% confidence level.

[d]2005 and 2008 estimates for "Any counseling professional" reported here may differ from what is reported in other tables. "From a self-help group (AA, NA)" was not included in the "Any counseling professional" estimates reported in this table to preserve consistency with the 2002 study.

+ Data not reported. Low precision.

NA Not applicable or data not available.

401

Bray, R.M., et. al.. 2008 Department of Defense Survey of Health Related Behaviors Among Active Duty Personnel. RTI International. Sept 2009.

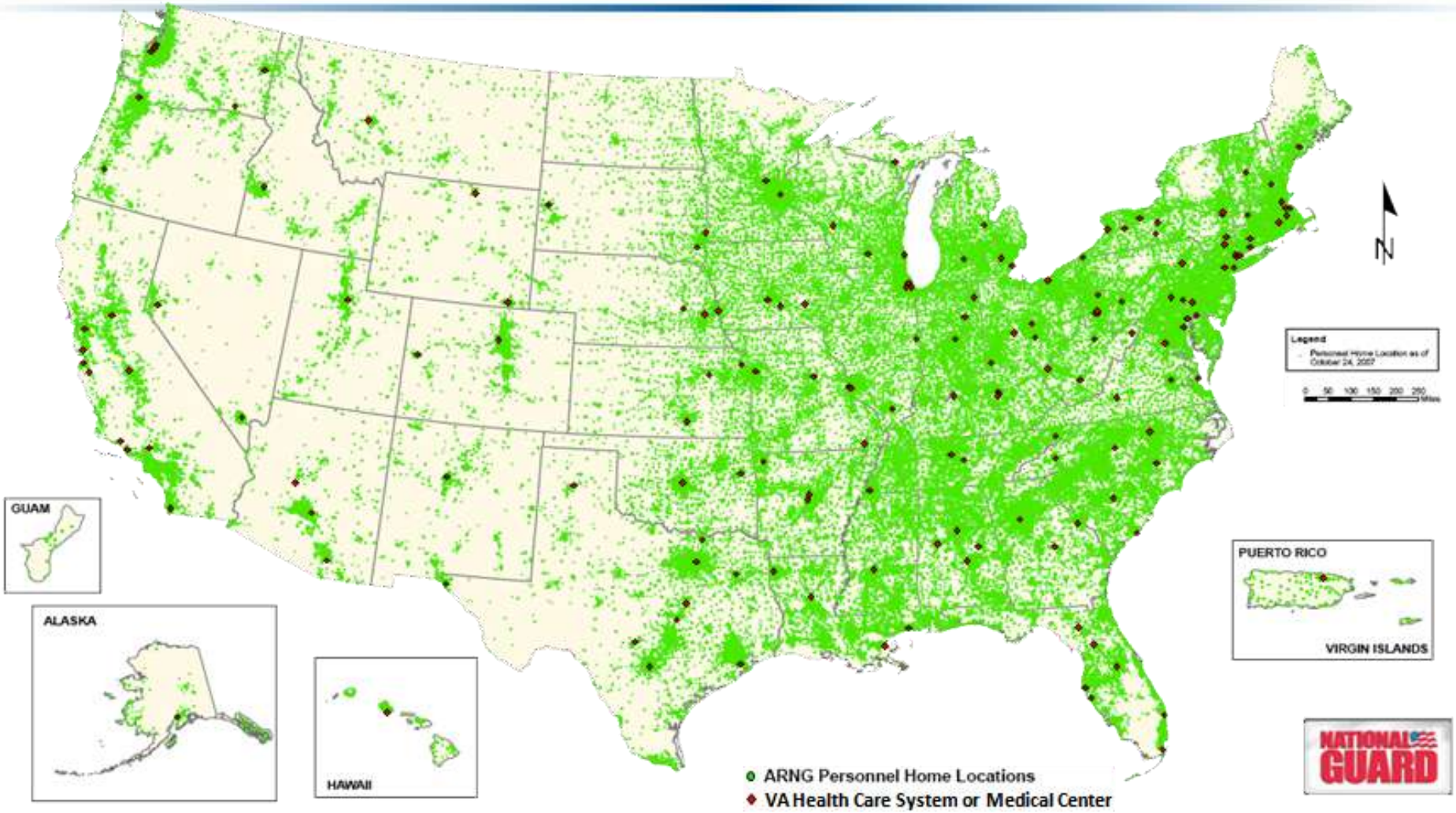
Perceived Stigma

- Possible solutions:
  - Anonymous Access to Care
  - Receive Care at Home/Residence
    - Not Seen Entering/Exiting Mental Health Clinic
  - Education and Outreach
    - Service Members
    - Chain of Command
    - Family
    - Peers
    - Other Providers
    - Public

Physical Access

- Distance From MTF or VA
  - Particularly for Guard/Reserve Component
  - Regular Psychological Health Visits Difficult
- Physical Injuries Precluding Travel
- Physical Injuries Making Access Difficult

VA HCS & MCs In Relation to ARNG HORs



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Physical Access

- Possible solutions:
  - Build more MTFs, Outpt Clinics
  - Retrofit MTFs, Outpt Clinics for Accessibility
  - Receive Care at Home/Residence
  - Smaller “Outpost” Style Access
  - Bring Care to the Customer

Technology Solutions

- Avoid “Gadgets for Gadgets Sake”
- Same Objective Not Met By Simpler Approach
- Cost/Benefit Ratio Acceptable
- Good Fit Between Technology Characteristics and Identified Problem(s)
- Ethically and Competently Delivered
- Acceptable to Target Population

Rizzo et. al. (2002)

Technology Survey Participants

352 Soldiers Surveyed

Mean Age:	25.9 (SD = 5.8)
Rank:	E1-E4 (58.2%) E5-E9 (36.6%) Officers (5.2%)
Men:	91.5%
Education:	HS Grad or GED (48.6%) Bachelors or Higher (8.8%)

Wilson et al. (2008) CyberPsychology and Behavior

Technology Survey Method

- Convenience Sample Surveyed in the Context of Post Deployment Mental Health Assessment (SWAPP)

- 54 Item Self-Report Survey Assessing:
  - Current Technology Experience/Knowledge
  - Comfort Using Technology in Treatment
  - Willingness to Use Specific Technologies as Augments to MH Treatment

Technology Survey Results

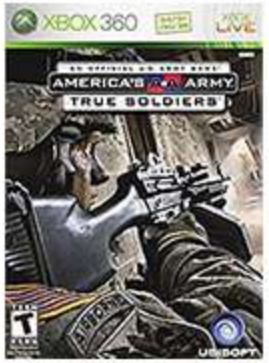
Proportion of Respondents Who Indicated Being “Interested” to “Very Interested” In Receiving Care Through the Following Modalities:

Talking with therapist by email	61%
Live Chat	55%
Video Teleconference	56%
Text Messaging	48%
Handheld Device	55%
Virtual Reality	58%


MOTOROLA
Tactical Breathing Trainer
Start Survey


Wii


The New York Times


XBOX 360
LIVE
AMERICA'S ARMY
TRUE SOLDIERS
UBISOFT


CALL·DUTY
MODERN WARFARE 2

Technology Solutions

- Web-based self help services
  - Afterdeployment.org
  - RealWarriors.net
  - Many others
- Video Teleconferencing (VTC) technologies
- Mobile Devices
- Web-based provider services
  - Webcam telehealth
  - Email, chat, SMS
- Virtual Worlds

Virtual Worlds

A virtual world is a three-dimensional, **persistent**, computer-based **simulation** environment intended for its users to inhabit and **interact** via **avatars**.

Users can **manipulate** elements of the modeled world and **interact** with other users in the **shared** virtual space, thus experiencing **telepresense** to a certain degree.

Affordances of Virtual Worlds

- Anonymity
- Proximity Enhancement
- Shared Presence
- 3D Modeling
- Create Environments, Experiences That Do Not or Cannot Exist in RL
- Naturalistic Interactions With Others/Environment/Data
- Immersive and Experiential

Rationale for Virtual Worlds

- Improved Access to Care
  - Possibilities for **Telehealth**
  - **Web-Based**
- Reduced Stigma
  - **Anonymous** access
  - Educational Opportunities: SMs, Vets, Families
- Improved Care
  - Interactions/interventions not possible in RL
  - Education/Training for Providers
  - Expert Consultation at a Distance

Avatars

- Virtual Representation of Self in 3D Space
- Naming = Anonymous
- Interaction With Others and Objects
- Personalization
- “Idealized” Self
- Can be Non-Human

T2 Second Life “Islands”

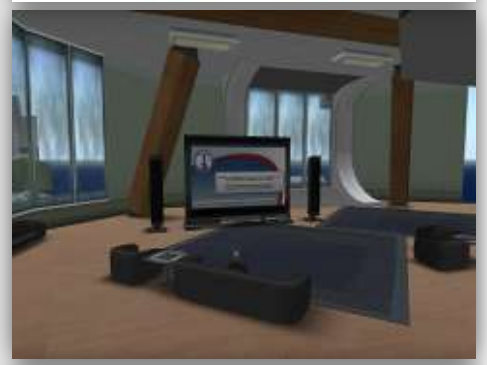
- Psychological Health Region
  - “Public Access” Islands
    - Target Opening Date: August 2010
    - Experiential Education and Outreach
    - Social Support and Reintegration
  - Controlled-Access Islands
    - Clinical Consultation
    - Provider Training
    - Clinical Services
    - VRET

Education and Outreach

- Experiential Learning:
  - e.g. Virtual PTSD, Virtual Sleep Lab
- Educational Gaming
- Post-deployment Psychological Health
- Library of External Links to Resources

- Service Members
- Spouse/Family re: PH and TBI
- Supervisors (NCOs, COs)
- Community At Large

Education and Outreach



All images are of projects piloted at Psychological Health Region (in Second Life) by the National Center for Telehealth and Technology (T2).

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Social Support

- Isolation Common
- Augmented by Anhedonia and Avoidance
- “Don’t Fit” With Deployed Peers nor Garrison
- Relationships Suffer
- Interacting with Others with Similar Concerns
  - Normalizing
  - Practice Relationship Skills in “Safe” Place
  - Shared Experiences
  - Shared Recreation

Social Support

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Provider Support and Training

- Peer and Expert Consultation
  - Deployed Providers
  - Providers in Small Facilities
  - Access to Experts
- Provider Training
  - Evidence-Based Therapies Dissemination
  - Avoid Costly and Disruptive TDYs
  - Access to Experts for Supervision

Provider Support and Training

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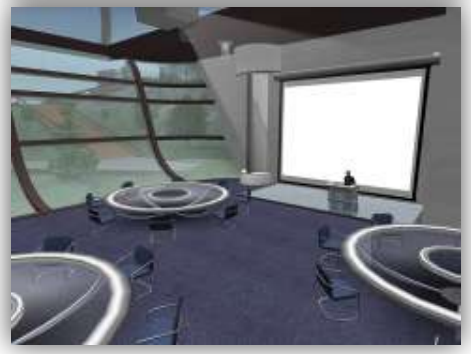
Provider Support and Training



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Clinical Services

- Psychotherapy
  - Telehealth for Psychological Intervention
    - Reduced Stigma
    - Reduced Access to Care Issues
    - Access to Expertise, Military Culture Competence
  - Virtual Reality Exposure
    - Virtual Environments Developed Faster, Cheaper, and More Customized
    - Stepping Stones for In Vivo Exposure

T2 Virtual Clinic

All images are of projects piloted at Psychological Health Region (in Second Life) by the National Center for Telehealth and Technology (T2).

Virtual Exposure Therapy

All images are of projects piloted at Psychological Health Region (in Second Life) by the National Center for Telehealth and Technology (T2).

Second NICoE

All images are of projects piloted at Psychological Health Region (in Second Life) by the National Center for Telehealth and Technology (T2).

Challenges

- Access to Virtual Worlds, such as SL
  - Unpublished Survey, April 2008
  - Convenience Sample, N=223;
    - 181 Male (81.2%)
    - 2 (0.9 %) had ever used Second Life
      - 1 had used SL > once, mostly as a “griefer”
    - 17 (7.6%) had ever heard of Second Life
      - Of those, 13 (76.5%) would be “somewhat” or “very” likely to use Second Life for education or training
    - 98 (43.9%) had used other virtual worlds
      - e.g. World of Warcraft, HALO, Call of Duty
  - Technical Issues re: Access
    - SM’s Computers Capable of Using VWs?
    - Network Security Issues, e.g. open ports
    - User Skills Needed to Use VWs Successfully

Challenges

- Anonymity
  - Reduce Stigma, Increase Utilization
  - Useful For Education, Self-directed Activities
  - Clinical Concerns: Authentication, Risk
  - Avatars as Facade vs. Outward Expression of Inner Self Image
- Staffing
  - Clinical Services Staffed by Real People
  - AI Cannot Replace Live Clinician
  - Acceptability By Clinicians

Challenges

- Regulation and Liability
  - Licensing of Providers / Jurisdiction
  - Managing High Risk Situations
  - Emergency Resources
  - Degrees of Anonymity
  - Appropriate Documentation & Billing Codes
  - Assuring Confidentiality on Public Grids
- Second Life Culture
  - “Griefers”
  - Intellectual Property Rights

IMPROVING PSYCHOLOGICAL HEALTHCARE THROUGH VIRTUAL WORLDS

Future Applications for PTSD & TBI

Conference registration is free for all attendees.

The theme of this small conference will be the use of virtual worlds applications for improving psychological health and addressing TBI. Leading researchers and clinicians will be brought together to explore the many opportunities as well as challenges relating to applications of virtual worlds technology to address psychological health needs. Invited speakers will discuss key developments and research findings. Discussion will focus on future directions for leveraging virtual worlds to improve the psychological health of Service Members, Veterans, and their families.

Early registration is strongly encouraged as space is limited. For those unable to attend in person, you may still attend virtually. Virtual attendees may participate through interactive webconferencing, or through Second Life ® in our virtual conference auditorium.

Thursday,
August 26th, 2010
8am-5pm,
Pacific Daylight Time (PDT)

Seattle Science Foundation
James Tower
550 17th Avenue, Suite 600
Seattle, WA, 98122
seattlesciencefoundation.org

In order to register or obtain further information about the event, please contact:

Joe Edwards
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(253) 968-3420

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www.t2health.org/vwconference

"A new century is at hand, and a fast-spreading technology promises to change society forever. It will let people live and work wherever they please, and create dynamic new communities linked by electronics, improve the lot of the poor, and reinvent government..."

-an article about the telephone, 1898

Contact

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